



IBM Software Group

Does Open Source Matter?

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Open Source and Open Standards

Open Standards

- **Interfaces and formats openly documented, accepted by the industry and freely available for adoption**
- **HTTP, HTML, WAP, TCP/IP, XCML, SQL**
- **Typically built by IT companies in consortia – W3C, OASIS, OMA**
- **The IT industry supports these standards**
- **IBM is a major contributor and supporter of Open Standards**

Open Source

- **Software whose source code is made available allowing anyone to copy, modify and redistribute without fees**
- **Linux, Eclipse, Apache, Mozilla, Samba**
- **Built by individuals and communities of IT professionals**
- **Supported by no-one, except for reputation of backers e.g. IBM, Sun, Oracle, SuSe when they believe it furthers their agenda or that of the market**



Open Source and IBM

What it is

- **Pragmatic use of technology**
- **Support of valid and well-accepted alternative to proprietary offerings**
- **A reflection of the market demands**
- **An expansion of the choice for customers**
- **Choice of some OSS components – Linux, Eclipse, Samba, Mozilla, Apache**
- **Driving force behind Grid Computing**

What it isn't

- **An anti-Microsoft tactic**
- **An attack on choice of proprietary systems**
- **A political movement**
- **An endorsement of the OSS model per se**



IBM and Linux – the odd couple?

IBM committed to Open Standards and Open Source

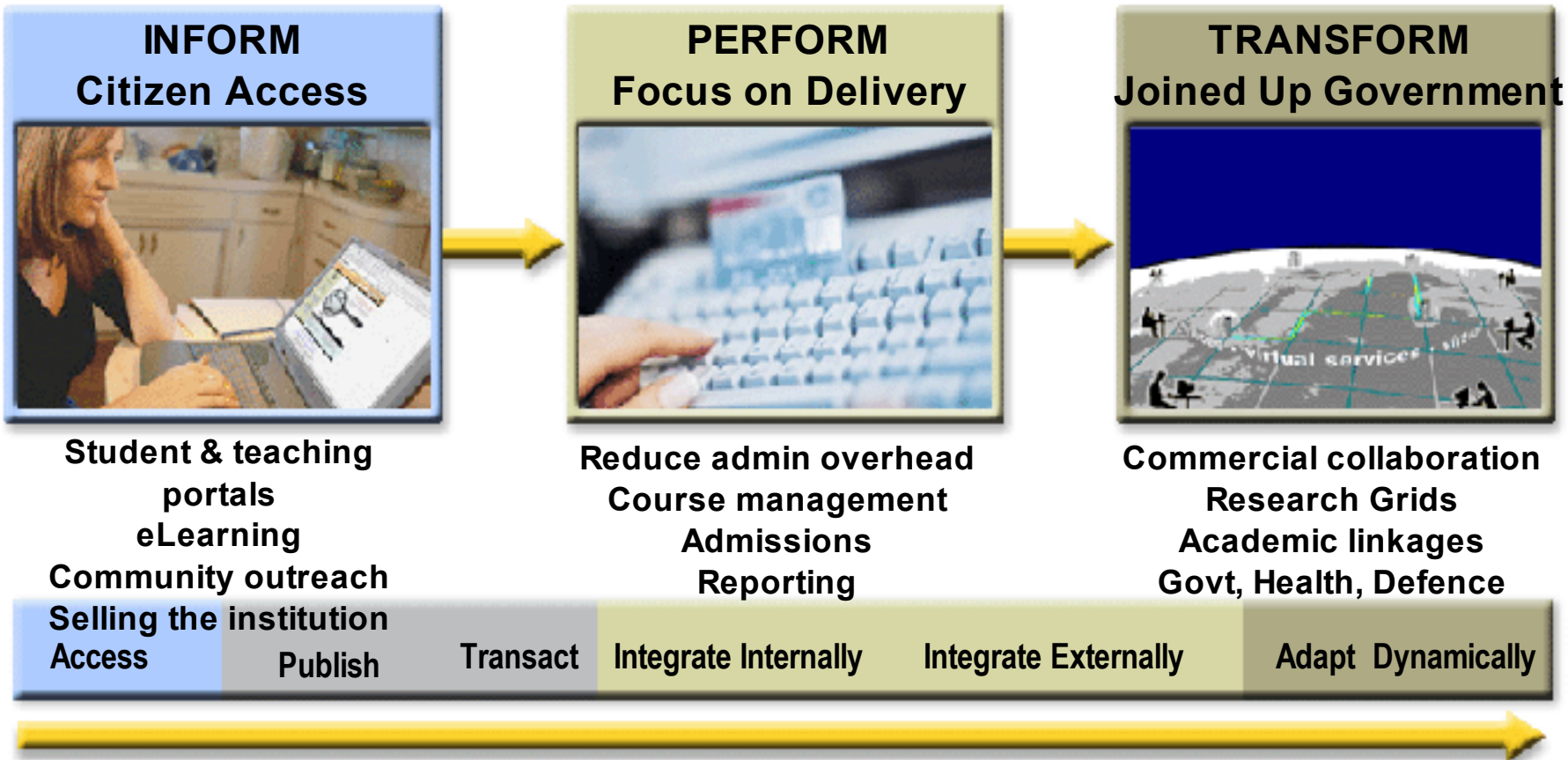
- **Multi-platform, open standards are central to IBM's e-business strategy**
- **Committed to Linux since 1999 and have spent \$1.4Bn on R&D**
- **250 engineers in IBM Linux Technology Centre adding to the kernel**
- **6,300 customer engagements: Wimbledon, French Open, US Open Websites – genomic research, seismic processing – ibm.com – German Government**

What we offer

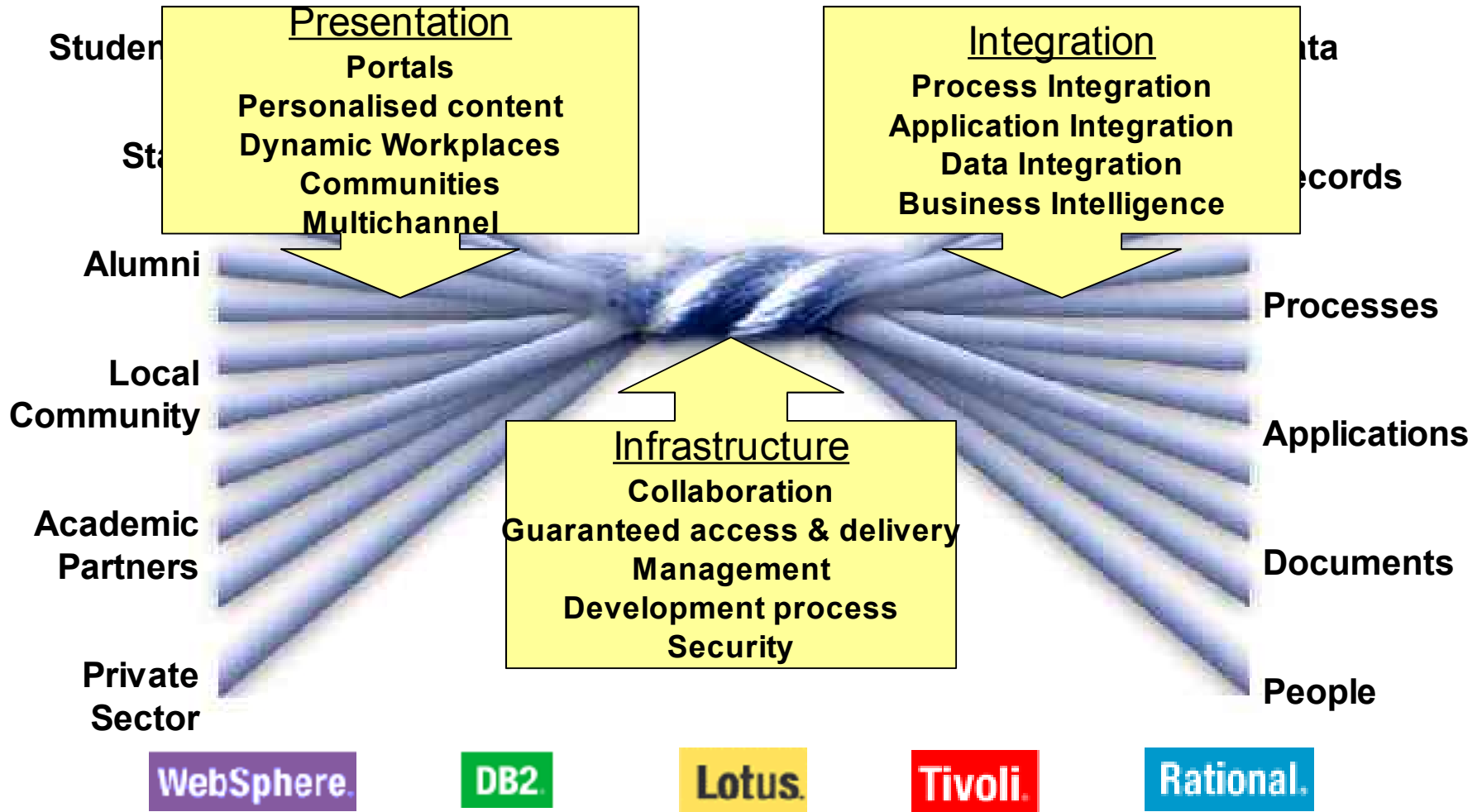
- **Runs on all eServer platforms from Intel to mainframe**
- **70+ IBM software products – all the brands – run on Linux**
- **4,200 ISV applications on IBM software under Linux**
- **Services include**
 - Business and Technical Consulting, Outsourcing
 - Linux Centre of Competence
 - Porting services
 - eLearning technical and evaluation courses
 - Technical support



The Three Stages of e-Government Transformation



IBM is the world leader in middleware...



IBM Agreement on Linux

Support and enhances existing Open Source policy

- Provides trusted vendor
- Promotes choice
- Promotes best value

What is in the Agreement

- Discounted software & services for Linux adoption
- Hardware designed for Linux use
- Additional support e.g. Linux Integration Centre, Linux Competency Centre
- 10 Proof of concept trials

Comparison of Linux and proprietary alternatives, costed by IBM

Independent evaluation by OGC



Linux in Academia

University of Oxford – TOSCA Linux Cluster & eDiamond

University of Cambridge – Computational Genomics in Cancer

Heriot-Watt University – Petroleum Engineering

Advanced School for Computing and Imaging (Netherlands)

Centre de Ressources Informatiques de l'Université Paris Sud – Grid

National Scalable Cluster Laboratory (PA, US) – Grid in Medical Imaging

University of Toronto Library – library services

British Columbia Genome Sequencing Center

Michigan State University – Supply Chain study

Seoul National University – R&D

Universidad Panamericana (Mexico) – Library

University of North Carolina – Molecular Modelling

National Center for Supercomputing Applications – PA, US

Purdue University – Student and academic Portal

Florida State University – commercial online learning

Clemson University – Facilities Management

Dresden University of Technology – historical restoration project

University of Minas Gerais (Brazil) – online learning and collaboration



Reasons to consider Linux

Good reasons to consider Linux

- **Competition - Avoids commercial lock-in**
- **Security - Avoids security 'monoculture'**
- **Scalability – When used in clusters & grids**
- **Flexibility - Across multiple devices and hardware, allows collaboration between organisations**
- **Potentially makes some projects affordable**

Bad reasons to consider Linux

- **Political/religious fervour**
- **Because all proprietary software is 'bad'**
- **Because it's free**



eDiamond Breast Cancer

Challenge

- Provide capability to capture mammograms across UK for comparison and analysis of patterns
- Part of UK Govt eScience initiative
- Joint initiative between Oxford, IBM & DTI

Results & Benefits

- St George's, St Thomas' & John Radcliffe & Breast Screening Edinburgh & Glasgow
- To be extended to 92 screening centres
- Created 'photo album' of mammograms for comparison in breast cancer screening
- Advanced analytical tools
- Data mining to determine impact of environment & lifestyle
- Hope to overcome false positive results
- IBM DB2, WebSphere and DiscoveryLink



Aiming to prove the benefits of grid technology to breast imaging in the UK.



"The eDiamond programme will improve the detection of breast cancer and increase the efficiency of its subsequent treatment"

Lord Sainsbury, Science Minister

"The results of this project could transform breast cancer screening in the future and save lives"

Nick Donofrio, IBM

Oxford Supercomputing Centre

Challenge

- Supercomputing Linux cluster for Government, Academic and Private Research and Development
- Provide cost effective alternative to incumbent SGI

Solution and Benefits

- 16 node IBM xSeries Cluster
- Red Hat Linux
- Myrinet Switch
- Escore
- Portland Fortran
- Improve system capacity
- Dramatically reduce cost of system

"Linux scales from desktops to massively parallel clusters, enabling us to meet the needs of researchers who develop and run applications on desktops, on Linux clusters and on everything in between."

Dan Reed, Director, National Center for Supercomputing Applications and National Computational Science Alliance

TOSCA:
the OSC
linux cluster



University of Oxford

Some parting thoughts

OSS does not change your needs

- License cost typically 5-10% TCO
- Is it fit for purpose?
- How do I know it will be there tomorrow?
- Who is going to design, install, maintain, support?

Look at OSS with an Open Mind

- Commit yourselves to Open Standards
- Use OSS as part of a 'mixed economy'
- Does OSS deliver best value for your task?
- Be a pragmatist - beware the zealots!
- If it looks too good to be true, it probably is

